**In accordance with the Standard for Classification and Labeling of Chemical Substance and Safety Data Sheet, Article 10 Paragraph 1 - Korea**

# SAFETY DATA SHEET

Buffer solution pH 9

**SDS Number:** AA21553-0000000020

**In accordance with the Standard for Classification and Labeling of Chemical Substance and Safety Data Sheet, Article 10 Paragraph 1**

## Section 1. Chemical product and company identification

**A. Product name** : Buffer solution pH 9

**B. Relevant identified uses of the substance or mixture and uses advised against**

**Product use** : Laboratory chemicals

**C. Manufacturer / Importer / Distributor** :

Manufacturer
**Metrohm AG**
Ionenstrasse
9100 Herisau
Switzerland
Tel.: +41 (0)71 353 85 85
Fax: +41 (0)71 353 89 01
E-Mail: info@metrohm.com
Web: www.metrohm.com

Supplier
**Metrohm Korea Ltd.**
5F, 9 Jeongui-ro 8-Gil
Songpa-Gu
Seoul
Republic of Korea

Tel.: +82 (2) 2199 2800
E-Mail: info@metrohm.kr

**e-mail address of person responsible for this SDS** : datasheet@metrohm.com

**Emergency telephone number of the company** : + 49 (0)6132-84463 (24 h, GBK GmbH)

## Section 2. Hazards identification

**A. Hazard classification** : TOXIC TO REPRODUCTION - Category 1B

This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.

**B. GHS label elements, including precautionary statements**

**Symbol** :

**Signal word** : Danger

**Hazard statements** : H360 - May damage fertility or the unborn child.

**Precautionary statements**

# Section 2. Hazards identification

**Prevention** : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.

**Response** : P308 + P313 - IF exposed or concerned: Get medical advice or attention.

**Storage** : Not applicable.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**C. Other hazards which do not result in classification**

None known.

# Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name | Common name | Identifiers | % |
|---|---|---|---|
| disodium tetraborate decahydrate | disodium tetraborate decahydrate | CAS: 1303-96-4<br>EC: 215-540-4 | ≥0.1 - ≤5 |
| boric acid | - | CAS: 10043-35-3<br>EC: 233-139-2 | ≥0.1 - ≤5 |

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

# Section 4. First aid measures

**A. Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**B. Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**C. Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**D. Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**E. Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

# Section 4. First aid measures

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**See toxicological information (Section 11)**

# Section 5. Fire-fighting measures

**A. Extinguishing media**

**Suitable extinguishing media** : Use dry chemical, $CO_2$, water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : Do not use water jet.

**B. Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : No specific data.

**C. Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Remark (Explosibility)** : Not considered to be a product presenting a risk of explosion.

# Section 6. Accidental release measures

**A. Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**B. Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**C. Methods and materials for containment and cleaning up**

**Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

# Section 7. Handling and storage

## A. Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## B. Conditions for safe storage, including any incompatibilities

: Store between the following temperatures: 15 to 25°C (59 to 77°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

# Section 8. Exposure controls/personal protection

## A. Control parameters

**Occupational exposure limits**

| Ingredient name | Exposure limits |
|---|---|
| disodium tetraborate decahydrate | **ISHA Article 42 (Republic of Korea, 1/2020) [Borates tetrasodium salts (Decahydrate)]** Reproductive toxicity 1B.<br>TWA 8 hours: 5 mg/m³. Form: inhalable fraction. |
| boric acid | **ACGIH TLV (United States, 1/2025) [Borate compounds, Inorganic]** A4.<br>TWA 8 hours: 2 mg/m³. Form: Inhalable fraction.<br>STEL 15 minutes: 6 mg/m³. Form: Inhalable fraction. |

**Biological exposure indices**

None known.

**Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

## B. Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Personal protective equipment**

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

# Section 8. Exposure controls/personal protection

**C.**

**Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

# Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**A. <u>Appearance</u>**

**Physical state** : Liquid.

**Color** : Colorless.

**B. Odor** : Odorless.

**C. Odor threshold** : Not available.

**D. pH** : 9

**E. Melting/freezing point** : Not available.

**F. Boiling point or initial boiling point and boiling range** : 103.4 to 103.8°C (218.1 to 218.8°F)

**G. Flash point** : Not applicable.

**Fire point** : Not available.

**H. Evaporation rate** : Not available.

**I. Flammability (solid, gas)** : Not available.

**J. Lower and upper explosive (flammable) limits** : Not available.

**Explosive properties** : Not considered to be a product presenting a risk of explosion.

**K. Vapor pressure** : 2.3 kPa (17.251 mm Hg)

**L. Solubility in water** : Not available.

**M. Vapor density** : Not available.

**N. Relative density** : Not available.

**Density** : 1.0023 g/cm³ [20°C (68°F)]

**O. Partition coefficient: n-octanol/water** : Not applicable.

# Section 9. Physical and chemical properties

**P. Auto-ignition temperature** : Not applicable.

**Q. Decomposition temperature** : Not available.

**R. Viscosity** : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): Not available.

**S. Molecular weight** : Not applicable.

**Particle characteristics**

**Median particle size** : Not applicable.

# Section 10. Stability and reactivity

**A. Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**B. Conditions to avoid** : Keep away from heat, sparks and flame.

**C. Incompatible materials** : No specific data.

**D. Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# Section 11. Toxicological information

**A. Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Inhalation** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Eye contact** : No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Eye contact** : No specific data.

**B. Health hazards**

**Acute toxicity**

# Section 11. Toxicological information

| Product/ingredient name | Result and Species | Dose [Exposure] | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | Oral - Rat - Male, Female - LD50 [OECD 401] | >2500 mg/kg | - |
| | Oral - Rabbit - Male, Female - LD50 [OECD 403] | >2000 mg/kg | read-across, CAS: 12179-04-3 |
| | Inhalation - Rat - Male, Female - LC50 Dusts and mists | >2.12 mg/l [4 hours] | - |
| boric acid | Oral - Rat - Male, Female - LD50 [ECHA] | 3450 mg/kg | - |
| | Oral - Rabbit - Male, Female - LD50 [OECD 403] | >2000 mg/kg | - |
| | Inhalation - Rat - Male, Female - LC50 Dusts and mists | >2.12 mg/l [4 hours] | - |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Irritation/Corrosion**

| Product/ingredient name | Result and Species | Exposure | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | Skin - Rabbit - Non-irritating to the skin. | Duration of treatment/ exposure: 24 hours | read-across, CAS: 12179-04-3 |
| | Eyes - Rabbit - Irritant - [OECD 405] | - | - |
| boric acid | Skin - Rabbit - Non-irritating to the skin. - [ECHA] | Duration of treatment/ exposure: 24 hours | - |
| | Eyes - Rabbit - Non-irritating to the eyes. - [OECD 405] | Duration of treatment/ exposure: 24 hours | - |

**Conclusion/Summary**

**Skin** : Based on available data, the classification criteria are not met.

**Eyes** : Based on available data, the classification criteria are not met.

**Respiratory** : Not available.

**Respiratory or skin sensitization**

| Product/ingredient name | Route of exposure and Species | Result | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | skin - Guinea pig [OECD 406] | Not sensitizing | - |
| boric acid | skin - Guinea pig [OECD 406] | Not sensitizing | - |

**Conclusion/Summary**

**Skin** : Based on available data, the classification criteria are not met.

**Respiratory** : Not available.

**CMR - ISHA Article 42 Occupational Exposure Limits**

| Product/ingredient name | Identifiers | Name on list | Classification |
|---|---|---|---|
| disodium tetraborate decahydrate | CAS: 1303-96-4 EC: 215-540-4 | Borates tetrasodium salts (Decahydrate) | Reproductive toxicity 1B |

**Mutagenicity**

# Section 11. Toxicological information

| Product/ingredient name | Result | Experiment | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | Negative | Mammalian-Animal - Metabolic activation: with and without | - |
| | Negative [Ames, OECD 471] | Bacteria - Metabolic activation: with and without | S. typhimurium |
| | Negative [OECD 476] | In vitro - Mammalian-Animal - Metabolic activation: with and without | - |
| | Negative [OECD 474] | Mammalian-Animal - Oral | - |
| boric acid | Negative | Mammalian-Animal - Metabolic activation: with and without | - |
| | Negative [Ames, OECD 471] | Bacteria - Metabolic activation: with and without | S. typhimurium |
| | Negative [OECD 476] | In vitro - Mammalian-Animal - Metabolic activation: with and without | - |
| | Negative [OECD 482] | Mammalian-Animal - Metabolic activation: with and without | - |
| | Negative [OECD 474, Micronucleus-test] | Mammalian-Animal - Oral | - |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Carcinogenicity**

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Classification**

| Product/ingredient name | OSHA | IARC | NTP | ACGIH |
|---|---|---|---|---|
| disodium tetraborate decahydrate | - | - | - | A4 |
| boric acid | - | - | - | A4 |

**Reproductive toxicity**

**Conclusion/Summary** : May damage fertility. May damage the unborn child.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Potential chronic health effects**

**Chronic toxicity**

# Section 11. Toxicological information

| Product/ingredient name | Result and Species | Dose [Exposure] | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | Oral - Chronic - Rat - Male, Female - - | 100 mg/kg | - |
| | Oral - Chronic - Rat - Male, Female - - | 334 mg/kg | - |
| boric acid | Oral - Chronic - Rat - Male, Female - - | 17.5 mg/kg | - |
| | Oral - Chronic - Rat - Male, Female - - | 58.5 mg/kg | - |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : May damage fertility or the unborn child.

**Numerical measures of toxicity**

**Acute toxicity estimates**

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|---|---|---|---|---|
| disodium tetraborate decahydrate | 2500 | N/A | N/A | N/A | N/A |
| boric acid | 3450 | N/A | N/A | N/A | N/A |

# Section 12. Ecological information

## A. Ecotoxicity

| Product/ingredient name | Result [Exposure] | Species | Remarks |
|---|---|---|---|
| disodium tetraborate decahydrate | Acute - EC50 1085 to 1402 mg/l [48 hours] | Daphnia - *Daphnia magna* | - |
| | Acute - EC50 158 mg/l [96 hours] | Algae - *Desmodesmus subspicatus* | - |
| boric acid | Acute - LC50 79.7 mg/l - Static [96 hours] [US-EPA] | Fish - *Pimephales promelas* | - |
| | Acute - EC50 52.4 mg/l [74.5 hours] [OECD 201] | Algae - *Raphidocelis subcapitata* | - |
| | Acute - EC50 133 mg/l [48 hours] | Daphnia - *Daphnia magna* | - |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

## B. Persistence and degradability

**Conclusion/Summary** : There are no data available on the mixture itself.

## C. Bioaccumulative potential

# Section 12. Ecological information

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| boric acid | -1.09 | - | Low |

**D. Mobility in soil**

**Soil/Water partition coefficient** : Not available.

**Mobility** : Not available.

**E. Other adverse effects** : No known significant effects or critical hazards.

# Section 13. Disposal considerations

**A. Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**B. Disposal precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

# Section 14. Transport information

| | UN | IMDG | IATA |
|---|---|---|---|
| **A. UN number** | Not regulated. | Not regulated. | Not regulated. |
| **B. UN proper shipping name** | Not regulated. | Not regulated. | Not regulated. |
| **C. Transport hazard class(es)** | Not regulated. | Not regulated. | Not regulated. |
| **Label** | | | |
| **D. Packing group** | Not regulated. | Not regulated. | Not regulated. |
| **E. Environmental hazards** | No. | Marine Pollutant: No | No. |

**F. Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not intended.

# Section 15. Regulatory information

## A. Regulation according to ISHA

**ISHA article 117 (Harmful substances prohibited from manufacture)** : None of the components are listed.

**ISHA article 118 (Harmful substances requiring permission)** : None of the components are listed.

### Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:
disodium tetraborate decahydrate
boric acid

**ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors)** : None of the components are listed.

**ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement)** : None of the components are listed.

**ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up)** : None of the components are listed.

**Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** : None of the components are listed.

## B. Regulation according to Chemicals Control Act

**Article 11 (TRI)** : None of the components are listed.

**Article 18 Prohibited (K-Reach Article 27)** : None of the components are listed.

**Article 19 Candidate substances subject to authorization (K-Reach Article 25)** : None of the components are listed.

**Article 19 Subject to authorization (K-Reach Article 25)** : None of the components are listed.

**Article 20 Toxic Chemicals (K-Reach Article 20)** : Toxic

**Article 20 Restricted (K-Reach Article 27)** : None of the components are listed.

**Article 39 (Accident Precaution Chemicals)**

Not listed.

### MoE 2021-51 - Regulations on the quantity of toxic substances, restricted substances, prohibited substances and permitted substances

| Ingredient name | Higher regulated quantity | Lower regulated quantity |
|---|---|---|
| boric acid | - | 40 tonnes |

# Section 15. Regulatory information

**Existing Chemical Substances Subject to Registration** : The following components are listed: disodium tetraborate decahydrate, Boric acid, crude natural

**C. Dangerous Materials Safety Management Act** : Not applicable.

**D. Wastes regulation** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**E. Other regulations in Korea and International regulations**

**Article 2 of Youth Protection Act on Substances Hazardous to Youth** : Not applicable.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

**Montreal Protocol**

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**OECD Comprehensive Global PFAS Database**

Not listed.

**Inventory list**

**Australia** : All components are listed or exempted.

**Canada** : All components are listed or exempted.

**China** : All components are listed or exempted.

**Eurasian Economic Union** : **Russian Federation inventory**: All components are listed or exempted.

**Japan** : **Japan inventory (CSCL):**
All components are listed or exempted.
**Japan inventory (ISHL):**
All components are listed or exempted.

**New Zealand** : All components are listed or exempted.

**Philippines** : All components are listed or exempted.

**Republic of Korea** : All components are listed or exempted.

**Taiwan** : All components are listed or exempted.

**Thailand** : All components are listed or exempted.

**United States** : All components are active or exempted.

**Viet Nam** : All components are listed or exempted.

# Section 16. Other information

**A. References** : - Registry of Toxic Effects of Chemical Substances
- United States Environmental Protection Agency ECOTOX

**B. Date of issue/Date of revision** : 2025/12/04

**Date of previous issue** : 2024/03/04

**C. Version** : 3

**Date of printing** : **2025/12/05**

**Other**

**Indicates information that has changed from previously issued version.**

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

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